## $^{133}$Pr IT decay　　2001Xu04,1989Li22

### History

| Type | Author | Citation | Literature Cutoff Date |
|------|--------|----------|------------------------|
| Full Evaluation | Yu. Khazov and A. Rodionov, F. G. Kondev | NDS 112, 855 (2011) | 31-Oct-2010 |

Parent: $^{133}$Pr: E=192.12 $14$; $J^{\pi}$=(11/2$^-$); $T_{1/2}$=1.1 s $2$; %IT decay=100.0

2001Xu04: $^{133}$Pr(IT) [from Ru($^{42}$Ca,X), E=232 MeV]; measured x$\gamma$(t) coin, $T_{1/2}$; deduced level scheme.

1989Li22: $^{133}$Pr(IT) [from $^{133}$Nd($\varepsilon$) in $^{nat}$Ce($^3$He,xp,yn) E=280 MeV] measured $\gamma$, $\gamma\gamma$(t), ce, ce$\gamma$(t); deduced levels, $\alpha$(exp),
　　log $ft$, mass-separated source, tape transport system, HPGe, Si(Li) detectors.

### $^{133}$Pr Levels

| E(level)$^{\dagger}$ | J$^{\pi\dagger}$ | $T_{1/2}$ | Comments |
|------|------|------|----------|
| 0.0 | (3/2$^+$) | | %$\varepsilon$+%$\beta^+$=100 |
| 61.69 $7$ | (5/2$^+$) | | |
| 192.07 $15$ | (11/2$^-$) | 1.1 s $2$ | %IT=100 |
| | | | $T_{1/2}$: from 61.7$\gamma$(t) and 130.4$\gamma$(t) in 2001Xu04. |

$^{\dagger}$ From Adopted Levels.

### $\gamma$($^{133}$Pr)

| E$_{\gamma}$$^{\dagger}$ | I$_{\gamma}$$^{\ddagger}$ | E$_i$(level) | J$_i^{\pi}$ | E$_f$ | J$_f^{\pi}$ | Mult.$^{\dagger}$ | $\alpha^{\#}$ |
|------|------|------|------|------|------|------|------|
| 61.7 $1$ | 16.08 $22$ | 61.69 | (5/2$^+$) | 0.0 | (3/2$^+$) | M1 | 5.22 |
| 130.4 $2$ | 11.63 $16$ | 192.07 | (11/2$^-$) | 61.69 | (5/2$^+$) | E3 | 7.60 |

$^{\dagger}$ From adopted gammas.
$^{\ddagger}$ Absolute intensity per 100 decays.
$^{\#}$ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation
　　based on $\gamma$-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=100.0

Legend

$I_\gamma < \ 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

$(11/2^-)$                                192.07    1.1 s 2

$(5/2^+)$                                 61.69

$(3/2^+)$                                 0.0

130.4 E3 100.0

61.7 M1 100.0

$^{133}_{59}\text{Pr}_{74}$